REMARKS

By the present amendment, previous claims 1-20 have been deleted without prejudice and without acquiescing to any of the Examiner's objections. Applicant reserves the right to pursue any of the deleted subject matter in a further divisional, continuation or continuation-in-part application. New claims 21-23 have been added which find support in previous claims 13-19 and new claims 24-26 find support on page 10, line 16-21. The amendment does not contain amendment and its entry is respectfully requested.

The Official Action dated February 19, 2003 has been carefully considered. It is believed that the amended claim submitted herewith and the following comments represent a complete response to the Examiner's rejections and place the present application in condition for allowance. Reconsideration is respectfully requested.

The Examiner has objected to the oath or declaration being defective as it fails to claim benefit of the related non-provisional and provisional applications recited on page 1. We point out that the format of the oath that was filed was Form PTO/SB/01A, which does not require that information as it is provided in the Application Data Sheet under 35 CFR 1.76. We point out that we filed the Application Data Sheet with the application and we are enclosing a copy herewith.

Figure

We are submitting new Figure 1 herewith in order to respond to the Notice of Draftperson's Patent Drawing Review. No new matter is contained in the attached figure.

Disclosure Objections

The disclosure has been amended at page 1 in order to update the status of 09/579,463. The disclosure has also been amended at pages 11, 16, 18 and 20 in order to correct the exponents or typographical errors. Tables 1 and 2 have also been amended in order to provide the proper Greek letters.

Claims Objections

The Examiner has objected to claim 20 as being of improper dependent form. In response, claim 20 has been deleted without prejudice.

The Examiner has also objected to claims 14-16 and 17-19 as being substantial duplicates as the compositions are identical although the intended use differs. The Examiner states that the intended use does not distinguish the compositions. In response, in the new set of claims submitted herewith, the intended use of the composition is not recited and there are no overlapping claims.

In view of the foregoing, we respectfully request that the objections to the claims under 37 CFR 1.75 be withdrawn.

35 USC §112, second paragraph

The Examiner has objected to claims 13-20 under 35 USC §112, second paragraph as being indefinite. In particular, the Examiner states that it is unclear how the constructs or cocktails are formed. In response, in the new claims submitted herewith, the composition has been clarified to specify that each antibody that binds to a particular cell antigen is linked to an antibody that binds to an erythrocyte. The wording of the claim is clear from the application as filed, for example, on page 10, lines 21-26 and in Figure 1.

In view of the foregoing, we respectfully request that the objections to claims under 35 USC §112, second paragraph be withdrawn.

35 USC §102

The Examiner has objected to claims 13 under 35 USC §102 as being anticipated by Hillyard et al. (U.S. Patent No. 5,086,002); Taylor et al. (U.S. Patent No. 5,470,570); Labruguen et al. (Immunol. Left. 32, 175, 1995); Slaper-Cortenback et al. (Bone Marrow Purging and Processing, 337, 1990); Slaper-Cortenback et al. (Exp. Hematol. 18, 49, 1990); Slaper-Cortenback et al. (Advances in Bone Marrow Purging and Processing

147, 1992); Vervoordeldonk et al. (Journal of Hematotherapy 6, 495, 1997); Schreiner et al. (Transfus. Sci. 17, 637, 1996) and Stem Cell Technologies Website.

Claim 13 has been deleted by the present amendment which renders all of the objections moot.

The Examiner also made several comments regarding the effective filing date of each claim. We agree that claim 13 is entitled to the earliest priority date of May 28, 1999 in USSN 60/136,770. However, we disagree that claims 17, 19 and 20 are only entitled to the filing date of the parent application, USSN 09/579,463 that was filed on May 26, 2000. These claims are entitled to the priority date of USSN 60/193,371, which is March 31, 2000. In particular, we draw the Examiner's attention to page 14, lines 25-28, Example 9 in its entirety as well as Table 9 of the '371 application, copies of which we enclose. In particular, it is noted that Table 9 specifically lists the antibody combinations of previous claims 14, 16, 17 and 19 which are now claims 21 and 23. With regard to previous claims 15 and 18 (now claim 22), they recite a specific embodiment wherein the antibody composition further comprises an antibody capable of binding to the antigen CD36. Such an embodiment is a specific embodiment of the extensive cocktail listed in Table 9 and is covered in claim 20 of the '371 application. Therefore, we submit that all of the claims currently pending (claims 21-26) are entitled to the effective claim date of March 31, 2000.

The Examiner has asked that we clarify when the Rosettesep compositions were first offered for sale and whether on a website or in printed advertisements. We submit that the first time the antibody composition of claims 21 and 23 was disclosed was at the 91st American Association For Cancer Research (AACR) meeting held on April 1-5, 2000. We are enclosing a copy of the Abstract for that meeting. The Abstract was not submitted on the Information Disclosure Statement (IDS) as it was disclosed after the claim date for the claims that recite the antibody combinations disclosed at the meeting and therefore it does not constitute prior art. It should be noted that the antibody

combination of claim 22 was not disclosed at the AACR meeting and was not disclosed prior to the filing date of the present application of April 2, 2001.

The Examiner has also asked us to comment on when the antibody combinations were first offered for sale. The antibody combinations of claims 21 and 23 were first offered for sale on April 2, 2000 at the AACR meeting. The antibody composition of claim 22 was first offered for sale in 2003.

In view of the foregoing, we respectfully request that all of the objections to the claims under 35 USC §102 be withdrawn.

35 USC §103

The Examiner has objected to claims 14-20 under 35 USC §103(a) as being unpatentable over Peters et al. (FASEB Journal 2000) in view of Thomas et al. (U.S. Patent No. 6,117,985). Peters et al. is not citeable against the claims of the present application as it was first published on April 20, 2000, which is after the priority date of March 31, 2000 for the claims currently under examination. We point out that even if claim 22 is awarded the filing date of the present application of April 2, 2001, Peters et al. is still not citeable as it is an inventor derived disclosure that occurred less than one year before the present filing date. In any event, Peters et al. does not describe any of the antibody compositions described in pending claims 21-26.

As Peters et al. is not citeable, the only remaining reference is Thomas et al. which in no way discloses or remotely suggests an immunorosetting composition wherein each of the antibodies to the cell surface antigens is coupled to an antibody that binds to erythrocytes.

In view of the foregoing, we respectfully request that the objections to the claims under 35 USC 103 be withdrawn.

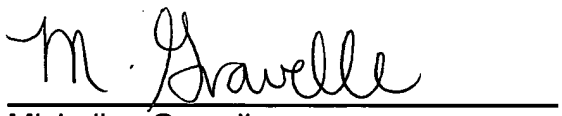
The Commissioner is hereby authorized to charge any fee (including any claim fee) which may be required to our Deposit Account No. 02-2095.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

In view of the foregoing comments and amendments, we respectfully submit that the application is in order for allowance and early indication of that effect is respectfully requested. Should the Examiner deem it beneficial to discuss the application in greater detail, he is kindly requested to contact the undersigned by telephone at (416) 957-1682 at his convenience.

Respectfully submitted,

Terry Thomas, Carrie Peters,
Peter Lansdorp



Micheline Gravelle
Registration No. 40,261

Bereskin & Parr
Box 401, 40 King Street West
Toronto, Ontario
Canada M5H 3Y2

(416) 364-7311

Version with markings to show changes made

In the Disclosur :

The paragraph beginning at page 1, line 4 has been amended as follows:

--This application is a continuation-in-part of United States application no. 09/579,463 filed May 26, 2000 (now Patent No. 6,448,075) which claims benefit from United States provisional application serial no. 60/203,477 filed on May 11, 2000 (now abandoned); United States provisional application serial no. 60/193,371 filed on March 31, 2000 (now abandoned); and United States provisional application no. 60/136,770 filed on May 28, 1999 (now abandoned), all of which are incorporated herein by reference in their entirety.--

The paragraph beginning at page 11, line 4 has been amended as follows:

--Within the context of the present invention, antibodies are understood to include monoclonal antibodies and polyclonal antibodies, antibody fragments (e.g., Fab, and F(ab')2), chimeric antibodies, bifunctional or bispecific antibodies and tetrameric antibody complexes. Antibodies are understood to be reactive against a selected antigen on the surface of a nucleated cell or erythrocyte if they bind with an appropriate affinity (association constant), e.g. greater than or equal to [107 M-1] 10^7 M^{-1}.--

The paragraph beginning at page 16, line 1 has been amended as follows:

--The antibody compositions are made by combining various tetrameric antibody complexes depending on which cells one wishes to deplete. The concentration of the various tetrameric antibody complexes varies: typically antibodies to antigens expressed on nucleated cells are at 10-30[mg] µg/mL in tetrameric complexes. The composition is then diluted 1/10 into the cells so the final concentrations of each anti nucleated cell antibody in the cell suspensions is 1.0-3.0 [mg] µg/mL.--

Lines 12-13 on page 16 have been amended as follows:

--1. Add 100[mL] µL antibody composition per mL of whole peripheral blood.--

Line 5 on page 18 has been amended as follows:

--4. Count cells and resuspend at 1x[108] 10^8/mL.--

Lines 9-10 on page 18 have been amended as follows:

--8. Add a tetrameric antibody complex specific to a given antigen at a final concentration of 1.0 [mg] μg/mL, the synthesis of which is described in Example 1.--

The paragraph beginning at page 20, line 29 has been amended as follows:

--This example demonstrates the enrichment of breast cancer cells from whole peripheral blood using the method described in Example 2. Cells from the CAMA breast cancer cell line were seeded into samples of whole peripheral blood at a frequency of 1/[103] 10^3, 1/[104] 10^4 and 1/[105] 10^5. Four tumor cell enrichment cocktails of tetrameric antibody complexes were prepared. The antibody composition of the cocktails is listed in Table 11. The results, shown in Table 12, demonstrate that the method of the invention results in greater than 2 log enrichment of tumor cells with 20-50% recovery of tumor cells. The more extensive cocktail offers a greater degree of tumor cell enrichment.--

The last two rows of Table 1 on page 26 have been replaced as follows:

TCR[ab] αβ	WT31	BD Biosciences, San Jose, CA
TCR [gd] γδ	Immu510	IMMUNOTECH, Marseille, France

Lines 20-22 of Table 2 on page 27, have been amended as follows:

--[gd] γδ T Cell Enrichment

Anti-

[ab] αβTCR--

Lines 3-5 of Table 2 (Cont'd) on page 28 have been amended as follows:

--[ab] αβ T Cell Enrichment

Anti-

[gd] γδ TCR--

Lines 21-23 of Table 2 (Cont'd) on page 29 have been amended as follows:

--CD4+ [ab] αβT Cell Enrichment

Anti-

[gd] γδTCR--

Lines 2-4 of Table 2 (Cont'd) on page 32 have been amended as follows:

--CD8+ [ab] αβT Cell Enrichment

Anti-

[gd] γδTCR--

In the Figure

Figure 1 currently of record has been replaced with Figure 1 submitted herewith.

In the Claims:

Claims 1-20 currently of record have been deleted.

New claims 21-26 have been added as follows:

21. (New) An antibody composition comprising:

(a) an antibody capable of binding to the antigen CD45, linked, either directly or indirectly to an antibody that binds to erythrocytes; and

(b) an antibody capable of binding to the antigen CD66b, linked, either directly or indirectly to an antibody that binds to erythrocytes.

22. (New) An antibody composition according to claim 21 further comprising:

(c) an antibody capable of binding to the antigen CD36, linked, either directly or indirectly to an antibody that binds to erythrocytes.

23. (New) An antibody composition according to claim 21 further comprising:

(c) an antibody capable of binding to the antigen CD2, linked, either directly or indirectly to an antibody that binds to erythrocytes;

(d) an antibody capable of binding to the antigen CD16, linked, either directly or indirectly to an antibody that binds to erythrocytes;

(e) an antibody capable of binding to the antigen CD19, linked, either directly or indirectly to an antibody that binds to erythrocytes;

(f) an antibody capable of binding to the antigen CD36, linked, either directly or indirectly to an antibody that binds to erythrocytes; and/or

(g) an antibody capable of binding to the antigen CD38, linked, either directly or indirectly to an antibody that binds to erythrocytes.

24. (New) An antibody composition according to claim 21 wherein the antibody that binds to erythrocytes is anti-glycophorin A.

25. (New) An antibody composition according to claim 22 wherein the antibody that binds to erythrocytes is anti-glycophorin A.

26. (New) An antibody composition according to claim 23 wherein the antibody that binds to erythrocytes is anti-glycophorin A.